

REMARKS

Upon entry of the present Amendment A, claims 1-7 are pending in the application, of which claims 1 and 5 are independent. Claims 1 and 5 are amended herein.

The Examiner in charge of the subject application was contacted by telephone on September 21, 2005 to discuss proposed amendments to the claims in view of the prior art references, and in particular, in view of Hayashi (US 4,781,022). The applicant thanks the Examiner for his helpful remarks during the brief discussion, in which the Examiner indicated that the proposed changes to claims 1 and 5 overcome the cited prior art reference.

However, in a second telephone conversation with the Examiner which took place on September 26, 2005, the Examiner indicated that a new, relevant reference had come to his attention. The Examiner noted that Saito et al. (US Patent Pub. No. 2002/0007633) discloses an actuation structure, including actuator motor, gears, and shaft, that are very similar to that disclosed by the applicant, but does not disclose the position of the actuator as above and outwardly adjacent to the swash plate plunger pump. In the Examiner's view, the applicant's invention, as represented by the proposed claims, would not be patentable over the combination of the Saito reference and the Hayashi ('022) reference (discussed below), since Hayashi discloses an actuator that is above and outwardly adjacent the transmission.

The above-identified Office Action has been reviewed, the references carefully considered, and the Examiner's comments carefully weighed. In view thereof, the present Amendment is submitted. The applicant respectfully submits that all of the above amendments are fully supported by the original application. The applicant also respectfully submits that the above amendments do not introduce any new matter into the application. It is contended that by the present amendment, all bases of rejection set forth in the Office Action have been traversed

and overcome. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

IN THE CLAIMS

Claim Rejections – 35 USC 112

The Examiner has rejected claims 1-4 under 35 USC 112, second paragraph, as being indefinite for failing to point out and distinctly claim the inventive subject matter. In particular, the Examiner objects to claim 1, last line, for using inconsistent terminology with reference to the swash plate adjustment mechanism. Claim 1 is amended herein to comply with the Examiner's suggested correction. That is, claim 1, last line, now recites "said swash plate adjustment mechanism", since this structure was previously introduced at line 3 of this claim. By this amendment, the objection to the claims is obviated.

Claim Rejections – 35 USC 102

The Examiner has rejected claims 1 and 3-6 under 35 USC 102 (b) as being anticipated by Hayashi et al. (US 5,353,595). In the rejection, the Examiner states that Hayashi '595 discloses a hydrostatic transmission having a pivotally movable swash plate 37 supported by a motor pivot member 38, which is supported by a concave hemispherical support socket (fig 2) formed in a motor casing 41, as part of a swash plate plunger motor M. Hayashi '595 discloses a swash plate plunger pump P connected to the motor via a closed circuit, a hollow housing including an auxiliary portion extending upward from a base portion (e.g. enclosing the pump, motor, and gearing 13), wherein the auxiliary portion contains an adjustment mechanism 43 for moving the motor swash plate.

The applicant respectfully disagrees that the disclosure of Hayashi '595 anticipates the

applicant's invention, since every claimed feature is not disclosed by this reference. In particular, Hayashi does not disclose the recited spatial arrangement of the auxiliary portion of the housing relative to the base portion. The applicant submits that Figure 1 of Hayashi '595, which shows the swash plate adjustment mechanism 43 at an upper right side of the figure, and which shows the hydraulic CVT, including the pump P and motor M, at a location below the swash plate adjustment mechanism, is described as a cross-sectional plan view of the power unit (col 2, lines 27-28). Likewise, Figure 2 of Hayashi '595 discloses a similar configuration, and is also described as a "cross-sectional plan view". A "plan view" is commonly understood, and defined in Webster's New World Dictionary (2nd College Edition, copyright 1980, page 1088), to be a horizontal section of a structure. Thus, Figures 1 and 2 of Hayashi '595 show a swash plate adjustment mechanism disposed to a side of the hydraulic CVT, rather than above the hydraulic CVT.

The Examiner has rejected claims 1, 3, and 5 under 35 USC 102(b) as being anticipated by Hayashi et al (US 4,781,022). The Examiner states that Hayashi '022 discloses a hydrostatic transmission (e.g. Fig 15, 23) having a pivotally movable swash plate 20 supported by a motor pivot member 22, which is supported by a motor casing 41 as part of a swash plate plunger motor M. Hayashi '022 discloses a swash plate plunger pump P connected to the motor via a closed circuit, a hollow housing including an auxiliary portion 283 extending upward from a base portion (4), wherein the auxiliary portion contains an adjustment mechanism R for moving the motor swash plate, with a servo motor 286 attached to a side surface on first side (front) of the auxiliary portion.

Upon review of Hayashi '022, the applicant agrees that Hayashi '022 has relevance to the claimed invention. However, the applicant submits that the applicant's inventive hydraulic

continuously variable transmission is patentably distinct from the device disclosed by Hayashi '022. For example, in the Hayashi '022 reference, the interconnection between the transmission shaft and the crankshaft is achieved using a chain-type decelerator, whereas the applicant discloses a main clutch, including an input drive gear, as the means by which the transmission shaft and the crankshaft are connected. As a second example, as disclosed by Hayashi '022, the position of the motor swash plate is controlled by a motor 286 acting through a reducing gear system, damper, and a trunion operatively connected to the motor swash plate. In contrast, the applicant avoids the added transmission width associated with the a reducing gear system, damper, and a trunion by using an adjustment arm portion 35a which extends downward from the adjustment mechanism and connects the motor swash plate pivot member to the servo-mechanism. Moreover, whereas Hayashi '022 discloses the adjusting motor 286 positioned adjacent to the motor-end of the transmission, the applicant discloses the adjusting motor 67 positioned forward of the pump end of the transmission so as to be spaced from the motor end by the pump end. The adjusting motor is connected to the motor swash plate via a spacer shaft that extends along the pump to reach the motor end of the transmission. As disclosed in the specification beginning at paragraph 93, and particularly in paragraphs 101-105, the inventive configuration permits a reduction in overall transmission width, and prevents any adverse effect of transmission heat on the adjusting motor 67.

CLAIM AMENDMENTS

For these reasons, the applicant has amended independent claims 1 and 5 herein to more clearly recite the inventive transmission structure. In particular, in claim 1, the word "shaft" is amended to recite --axis-- to be consistent with the written disclosure at paragraph 18 and throughout the text. Also in claims 1 and 5, an actuator for the adjustment mechanism is claimed

to be positioned at an outer side of the transmission on a side opposed to the side of the movable swash plate. As stated above, this arrangement is advantageous in terms of reduction of overall transmission width and also prevents any adverse effect of transmission heat on the adjusting motor 67. Claim 5 is further amended herein to clearly recite the specific structure of the swash plate adjustment mechanism. These features are fully supported in the specification (paragraphs 93-109), including the figures, and no new matter is added by these amendments. Moreover, these features are not suggested or disclosed in the cited prior art. The applicant submits that the actuator disclosed by Hayashi '022 is positioned at an outer side of the transmission on the same side as the side of the movable swash plate, and the actuator disclosed by Hayashi '595 resides in a horizontal plane with, and to a lateral side of, the transmission. Moreover, the adjustment mechanism of Hayoshi '022, which includes a trunion, sector gears, and stabilizers, is clearly different than that now recited in claim 5.

Claim Rejections – 35 USC 103

As regards a possible rejection of the claims using a combination of Hayashi '022 and Saito et al (US Pat. App. Pub. No. 2002/0007633 A1) under 35 USC 103, as suggested by the Examiner in the telephone conversation of September 26, 2005, the applicant respectfully disagrees with such a rejection.

The applicant notes that Saito et al. disclose (Fig. 1) an adjustment mechanism 79 that includes a first shaft extending parallel to the output shaft, a second shaft extending parallel to and substantially co-linear with the first shaft, the first shaft driven for rotation by the second shaft through a geared idler shaft, and a motor 80 which drives said second shaft, and an arm connecting a motor pivot member 22 to the first shaft. The motor 80 is secured to a casing 4 adjacent a side surface of the pump of the transmission.

As discussed above, Hayashi '022 discloses the motor swash plate adjusting motor 286 positioned above and adjacent to an outer end of the motor-end of the transmission.

The Standard for Obviousness under Federal Circuit Law

Applicant respectfully wishes to call the Examiner's attention to some relevant cases of the U.S. Court of Appeals for the Federal Circuit (CAFC). The CAFC was established in 1982 to bring national standards, and a certain level of conformity and continuity to Federal patent case law. Decisions of the Federal Circuit are relevant and helpful in giving guidance to patent practitioners, as well as to the personnel of the U.S. Patent and Trademark Office. The CAFC has stated that:

In order to determine obviousness as a legal matter, four factual inquiries must be made concerning: 1) the scope and content of the prior art; 2) the level of ordinary skill in the art; 3) the differences between the claimed invention and the prior art; and 4) secondary considerations of nonobviousness, which in case law is often said to include commercial success, long-felt but unresolved need, failure of others, copying, and unexpected results. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966); *Miles Labs., Inc. v. Shandon, Inc.*, 997 F.2d 870, 877, 27 USPQ2d 1123, 1128 (Fed. Cir. 1993).

The U.S. Court of Appeals for the Federal Circuit has said that a reference must be viewed in its entirety, *Gore v. Garlock*, 220 U.S.P.Q. 303 (CAFC 1983), and that it is impermissible to use the claims as a frame, and the references as a mosaic, to pick and choose selected pieces, out of context, to reconstruct the invention, *Northern Telecom v. Datapoint*, 908 F.2d 931 (CAFC 1990).

The U.S. Court of Appeals for the Federal Circuit has also said that that in order to combine references, the Examiner must show some motivation, suggestion, or teaching of the desirability of making the combination, *In re Dembiczak*, 50 USPQ 2d 1614, 1617 (CAFC 1999); and that the use of hindsight, in evaluating patentability, is improper, *In re Werner*

Kotzab, 55 U.S.P.Q. 2d 1313 (CAFC 2000); *Gore v. Garlock*, *supra*.

Specifically, in *Kotzab*, *supra*, the CAFC stated:

A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. See *Dembiczak*, 175 F.3d at 999, 50 USPQ2d at 1617. Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome, wherein that which only the invention taught is used against its teacher." *Id.*

Most, if not all inventions arise from a combination of old elements. See *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). Thus, every element of a claimed invention may often be found in the prior art. See *id.* However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. See *id.* Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant (citations omitted).

The applicant submits that the above-quoted language of the Court of Appeals for the Federal Circuit has relevance to prosecution of the present application, and that the Examiner's preliminary position on this matter should be reconsidered and withdrawn.

In particular, the applicant respectfully submits that it would not be obvious to modify the position motor swash plate adjustment mechanism 79 of Saito by positioning the motor 80 at a location adjacent one end of the as transmission and laterally outside thereof as disclosed by Hayashi '022 since neither reference provides a motivation for such a modification. Saito does not disclose or suggest any alternative positions for the motor 80. Furthermore, the applicant notes that, in Hayashi '022, the position of the motor swash plate is controlled by the motor 286 acting through a complicated mechanism including a reducing sector gear/worm gear combination 285, 281, a damper 282, and a trunion 270, 270' operatively connected to the motor swash plate. To incorporate speed reduction, damping, and actuation all together within this

mechanism, results in a mechanism that is inherently large, whereby the position of the motor 286 is shown to be adjacent one end of the as transmission and laterally outside thereof. Hayashi does not specifically disclose placement of the motor 286 at this location for any particular reason, whereby it can be assumed the position is determined by the size of the associated mechanism. Thus, there is no motivation for moving the actuator of Saito, who discloses a much simpler and compact mechanism, to a similar location since Saito does not include sector gears, dampers, or trunions. Moreover, such a modification would unfavorably complicate and enlarge the structure of Saito, whereby manufacturing costs and overall transmission weight would be increased for no disclosed benefit.

The Examiner has rejected claims 2 and 7 under 35 USC 103(a) as being unpatentable over Hayashi et al (4,781,022) in view of Pouliot (US 6,588,207). In the rejection, the Examiner states that Hayashi '022 discloses all the claimed features except an identification mark display portion provided on a second side surface of the auxiliary portion, substantially opposite to the first side, and that Pouliot discloses that for a hydraulic CVT, all parts should have at least one face stamped with an identification mark display portion (plane identifying letter) before assembly (col. 12, line 55 – col. 13, line 1). The Examiner further states that since Hayashi and Pouliot are from the same field of endeavor, the purpose disclosed by Pouliot would have been recognized in the pertinent art of Hayashi '022, and thus modification of Hayashi by Pouliot to include a identification mark display portion would have been obvious for identification purposes.

The applicant respectfully disagrees with this rejection since Pouliot does not teach providing an identifying mark to an exterior portion of a housing such as a crankcase which

encloses a transmission therein. The applicant submits that, in a description of a method of assembly of a transmission, Pouliot discloses stamping all transmission parts with an identifying letter prior to assembly. Although not specifically stated, since the statement appears within the context of the method of assembly, it is implied that such stamping of individual parts is intended to facilitate the assembly of the transmission due to the great number of internal transmission parts, including plural gears, idlers, slides, dividers, etc., of similar appearance. The applicant further submits that Pouliot does not disclose stamping identifying marks on an assembled transmission (that is, providing an identifying mark for the assembly as a whole rather than the pieces thereof), or the housing which encloses it. Because Pouliot does not teach inclusion of an identifying mark on the surface of the hollow transmission housing, and because Pouliot does not teach placement of an identifying mark at a specific location thereof, for example on an auxiliary portion of the hollow transmission housing as claimed, it would not be obvious to so modify the invention of Hayashi '022.

Other Matters

In an effort to expedite prosecution of the application, applicant has amended independent claims 1 and 5 of the application, as discussed herein.

Applicant respectfully submits that the present amendments patentably distinguish over the references, and place the claims in condition for allowance.

CONCLUSION

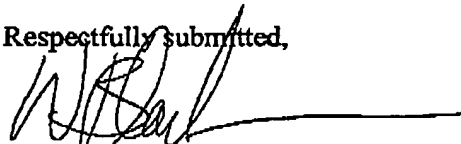
Based on all of the foregoing, applicant respectfully submits that all of the objections and rejections set forth in the Office Action are overcome, and that as presently amended, all of the pending claims are believed to be allowable over all of the references of record, whether considered singly or in combination. Applicant requests reconsideration and withdrawal of the rejection of record, and allowance of the pending claims.

If the Examiner is not fully convinced of all of the claims now in the application, applicant respectfully requests that the Examiner telephonically contact applicant's undersigned representative to expeditiously resolve prosecution of the application.

Favorable consideration is respectfully requested.

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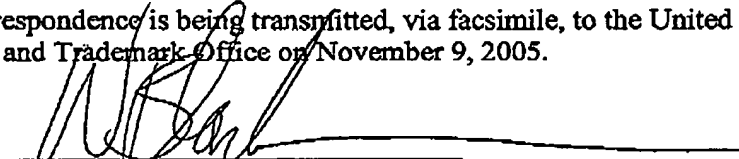
Respectfully submitted,



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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being transmitted, via facsimile, to the United States Patent and Trademark Office on November 9, 2005.



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